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New approach in the improvement of antiscorpionic immunotherapy: Input of TMG use as adjuvant for irradiated venom.

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Abstract
Background: Severe envenomation is a major public health problem in certain parts of the world such as North Africa, Central and South America, the Middle East, and South Asia. The toxic effects of scorpion envenomation are due to massive release of sympathetic and parasympathetic neurotransmitters; the severity is related to cardiac and hemodynamic changes, with cardiogenic shock and pulmonary edema contributing to the main causes of death. Due to this severity, intra-venous immunotherapy should be given to patients stung by scorpions as soon as possible. The production of specific antibodies of immunotherapy requires the use of highly immunogenic preparation to immunize sera producing animals, thus this preparation has to meet strict bioethics rules. The aim of this study was to determine the immunostimulating effect of TiterMax Gold adjuvant (TMG) associated to irradiated *Androctonusaustralis hector* venom in comparison to commonly used Freund's complete adjuvant preparation
Methods: Two groups of mice were immunized twice at one month intervals with TMG of FCA adjuvants associated to irradiated venom. The induced inflammatory and adaptive immune responses were evaluated. One month after the last booster, animals were challenged to ascending doses of native venom to evaluate their immunoprotectivness.
Results: TMG preparation use induced inflammation characterized by low activation of polynuclear cell levels and MPO and EPO seric activities compared to FCA group. Evaluation of the titers of specific antibodies showed that TMG preparation was more effective in inducing higher titers of neutralizing antibodies. Results also showed that animals immunized with TMG preparation were highly protected up to 6 LD50 of native venom.
Conclusion: These results allow to suggest the irradiated venom-TMG preparation as a more effective and secure preparation that could replace the FCA preparation in immunizing animal producers of antiscorpionic immune sera.
Keywords: *Androctonusaustralis hector*, envenomation, TiterMax Gold, immunotherapy, immunoprotection.

1. Declaration of conflicts

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2. Authors' biography

No Biography

3. REFERENCES

No references